Wantfa News

Newsletter of the Western Australian No Tillage Farmers Association (Inc.)

JULY, 1996

EDITORIAL COMMENT
David Rees

This is the first issue of Wantfa News that I have been invited to edit. It is a privilege to be invited to do this job, and to be associated with the no-till movement.

Who am I?

For those who do not know me, and to justify views expressed in this newsletter, a little background may help.

I am a farm consultant, based in Albany, and operating mainly along the south cost. Until 1986, I was with the Department of Agriculture at Jerramungup, and amongst other frustrations, I had to put up with a newly-graduated Bill Crabtree.

Those times were interesting. In the early 1980s, we had the severe wind erosion, that we really had no answer for. The herbicide methods were just developing, and for instance we were involved in the first broad-acres Round-up spray trials.

When Bill Crabtree came onto the scene, the deep ripping controversy was raging. How do you deep rip, yet avoid wind erosion problems on fragile soils?

At the time, intensive cropping was also controversial, yet lupin growing, combined with stubble retention offered not only potentially high yielding cereals, but also protection from wind erosion. That led to consideration of disk seeders, and eventually to trialling the Great Plain disks. All this of course was prompted and supported by motivated farmers.

South Coast Bias?

Much of my time is spent in areas east of Albany, as far as Ravensthorpe. As a result, you can expect a bias towards south coast and my clients. The way to fix this is to contribute your own stories for the newsletter.

I have attempted to rush this issue of the newsletter hot on the heels of seeding. Material submitted by members has been non-existent (what should I expect at this time of the year?) Hopefully, some of the material may stimulate a healthy debate, which is really the purpose of this newsletter.

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From Tynes to Discs ...

.....WANTFA President

President of WANTFA, Ken de Grussa, of Neridup, replaced tynes with Walker double-discs on his combine this season. A feature of the double discs has been their accurate seed placement.

"It's quite outstanding the way almost every seed came out of the ground on the same day," Ken said.

The germination is all the more pleasing given the hard start to the season.

Ken farms with wife Audrey, daughter Kathy, and son, Colin, cropping 1540ha (3800 ac) in a partnership that includes Ken's brother, Fred, and Fred's wife, Pam, and their son, Brian.

Their properties lie in a 500mm rainfall belt, soils predominantly sandy with clay at half a metre.

The de Grussas have equipped two John Shearer 5 m combines with 21 rows of Walker double disc-presswheel modules operating on a 9in row spacing and with wavy coulters on front.

Ken de Grussa

It cost $22,000 to set up each combine including a bar fitted for the coulters.

The move to no-till has been a gradual progression, something Ken as president of WANTFA recommends.

"The committee have been concerned that people are rushing into no-till, spending a lot of money on machines and then finding they are not really suitable to their needs," Ken said.

"We want to encourage people to make informed decisions and to trial no-till rather than adopt it on a broadscale first up."

Hoping to provide growers with better advice, WANTFA has applied to the Grains Research Development Council seeking funding for a no-till development officer who would service all agricultural areas.

Ken said the Association had progressed well in its four years but now was a time to "step up to another level".

His three-year term as president would expire this February.

Ken's path to no-till started in 1981 when he switched from conventional to direct drill using Shearer combines on standard tyne configuration.

Press wheels were first used in 1985 and helped especially in cloddy soil.

The de Grussa brothers then experimented with point sizes eventually settling on narrow lucerne points.

At the same time they began to remove some of the back cultivating tynes from the combine in an attempt to reduce a ridging effect.

Ken said seed was often being placed half way up a ridge and in non-wetting soils in particular this caused germination problems.

By 1987 the front cultivating tynes had also been removed leaving only the seeding tynes.

Disc coulters were then fitted in an attempt to cope with stubble, but last year the brothers determined that stubble would always be a problem and so moved to the Walker double discs.

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Editorial Comment ....

No-till - An Accident of Science?

It is amusing to reflect that no-till happened almost by accident on the south coast. Researchers such as Kevin Bligh had found benefit in reducing soil run-off and therefore erosion, by using narrow cultivation points. However at that time, around 1989, the south coast was facing much bigger concerns.

Wind erosion has caused enormous damage to soils and district morale, and one solution which was being developed was to continuously crop the fragile sandy soils with a lupin rotation. This posed the question of how to handle stubbles, and the idea of a disk seeder seemed the only possible solution.

The only machine that combined disks with press wheels, which had proved their worth on sands, was the Great Plains. The fact that it was a no-till seeder was of minor interest initially.

Our Impressions from the 1996 Seeding Season

The 1996 season has been a late and patchy start for areas east of Albany, through to Ravensthorpe, and probably other areas also. Rain that did occur was often less that 5mm, and unusual for the south coast, there has been no subsoil moisture.

This situation has proved to be ideal for no-till seeders. Conventional seeding, especially beginning with a cultivation, would have dried out what moisture there was, and left soils prone to wind erosion. It would also have buried weeds, which would have emerged with the crop.

The no-till seeders allowed seeding on the minimal rainfall, and soils were mostly left with a cover of pasture or crop residue to prevent wind erosion. Cultivating a dry soil always adds to non wetting problems, but with the no-till seeding, this problem is at least minimised.

Once the crops were in the ground, the dramas of weed control really started. There is no longer much doubt about the benefits of weed control the previous spring - this year paddocks which have not been topped have been almost impossible to manage.

Radish Control with no-till

This year, I have seen a striking example of radish control after five or six years of no-till cropping, and regular good control each year. For most of my clients, radish has become an unwelcome result of more regular cropping. However with this paddock, radish was bad in certain areas of the paddock when the heavy cropping began. Now there has been almost no radish germinating.

This result was predicted by some trial results from Victoria several years ago.

Radish seed left on the soil surface, rather than buried, mostly germinates within five years. Presumably this is because the seed pods are opened by wetting and drying, and fluctuations of temperature.

Whether we can eventually save on herbicides for radish remains to be seen.

Is Trifluralin Incorporation with knife points a good thing ?

Use of trifluralin has increased dramatically in recent years, because of good results with no-till tynes. No-till tynes keep the seed well away from the damaging effects of the surface trifluralin, ryegrass seeds are left directly in the trifluralin band, and enough soil is disturbed to cover and hold the trifluralin. This has been a welcome turn in the battle with herbicide resistance.

However, some experiences with no-till disks, with very little soil disturbance, are showing that there is almost no ryegrass germination, and therefore no need for trifluralin. From what we have seen, ryegrass can still germinate much later in the season, and this may be enough to multiply, but the reduced germination of ryegrass has certainly been encouraging. Another alternative is for trials to assess trifluralin with no incorporation.

Soil Activity of Knock-Downs

Theoretically we have been told that once the knock-downs - glyphosate and bipyridals, contact the soil, they are inactivated. However this is obviously not always the case.

Some years ago, glyphosate was found to be active enough in the soil to kill crops, especially associated with heavy weed growth, cold wet conditions, and seed mixed in with the chemical and weeds. Also, paraquat and Spray. Seed must have some soil effect, which has become very obvious this year.

With only a partial germination of weeds on only limited opening rains, many of our crops have been germinating at the same time as weeds such as brome and barley grass. The only control for weeds such as these is to use paraquat, preferably before the crop emerges, and this year, this method has been widely used. The theory is that even a young emerged crop can tolerate paraquat if conditions prevent translocation.

Results however have shown that crops can be seriously affected, and there is some crop effect, even when paraquat is applied before any seeds have emerged. This does not make the technique invalid, but does at least sound a note of caution. With no-till seeding, this soil activity may be very useful, because residues of the knockdown herbicide may be enough to kill emerging weed seeds. This may partly explain why there is very little weed emergence with no-till disks.

What we have learnt from no-till

When we first began with no-till, disaster was predicted for three reasons, and with experience now, these problems have mostly been laid to rest.

1. Weeds.

It was predicted that no till would require huge expense for weed control, and weed control would blow out. The early trials with the triple disk opener apparently showed no difference in weed control with cultivation and no-till plots. However better control of weeds has proved to be a major benefit with no-till. There have been some disappointments with use of only normal rates of glyphosate, but no-till users have developed knock-down strategies which are working adequately, and post emergent weed control, if need at all, is much more effective.

2. Rhizoctonia.

Before no-till seeding, many farmers had never even heard of rhizoctonia. It was predicted that no-till would at least falter as this disease became established, and many of the no-till machines were specifically designed to reduce the threat. This disease threat had a thorough hammering at field days, including visits from South Australian researchers such as David Roget. However as we developed knowledge of the disease, and experienced several years of no-till, the threat proved to be only of minor concern.

3. Non wetting soils.

There is still a lot of interest in "furrow seeding" to reduce non wetting problems. No-till seeding leaves the soil undisturbed, and may or may not channel the run-off into the furrows. However, the undisturbed soil which results from no-till is proving to improve the wettability of the soil, especially over a few years.

Apparently this is due to more active microbes in the soil, which break down the non wetting waxes.

The substance of these thoughts were submitted to the Kondinin Group for publication several years ago, but was not supported by the thinking of the time.

Editorial Comment ...

How "Precision Farming" will help no-till

At a recent meeting of the consultants' association, we had a run-down on "precision farming" - using satellite methods and computers to know exactly where you are in the paddock, monitoring crop yields at the exact point in the paddock, and possibly also adjusting fertilisers and sprays according to where you are in the paddock.

The technology now seems affordable - around $10,000 to set up a header for yield monitoring. Once the yield maps are produced, you can get a clear picture of what happened to crops across the paddock. This is ideal for trials.

For instance, a cultivated strip across the paddock should stand out if yields are any different from no-till.

Effects on different soil types would be apparent, considerably adding to what we would know about the benefits of problems with no-till methods.

The methods have the potential to turn paddock results into high quality, large scale trial plots.

Seeding by the Calendar, not the Rainfall

One client expressed the goal of being able to seed by the calendar, not waiting for the necessary rain.

This has been done for many years with dry sowing of lupins. Lupins have the advantage of being a large seed, capable of germinating successfully even on the soil surface, and with a good herbicide strategy.

However at least for south coast growers, major problems are wind erosion and development of water repellence. Also, there is a trend away from lupins as the cleaning crop, towards canola.

No-till seeders are helping to reduce these concerns.

If it ain't broke, don't fix it!

No-till seeding methods have now made such an impact on farmers, that there almost seems to be a feeling of having to apologise for continuing with conventional seeding methods. However, it current seeding methods are working well, no-till then becomes an issue of longer term benefit - soil structure, reduced erosion, better control of weeds. Also the equipment can be expensive, and therefore only justified over the longer term. In the meantime, there is benefit in watching developments, and "if it ain't broke, don't fix it".

From Tynes to Discs

Cont. from front page.

"Now we can go into any stubble without problem and that sure pleased Kathy, our operator this year," Ken said.

This year's paddocks received a knockdown in early April with Glyphosate at 500-600ml/ha and just before seeding started in late April, Sprayseed at 800ml.

The cropping program includes 240ha Siren and Rainbow canola (seeding late April at 4kg./ha with 80kg Summit DAPs), 200ha Merrit lupins (seeded mid May at 90kg with 82kg/ha super manganese), 350ha Cascade, Houtman and Sunelg barley (seeded late May at 60kg with 80kg DAPs) and 700ha Franklin and Skiff barley (seeded May 5 at 55kg with 80kg DAPs).

Ken said he was still to settle on a rotation with lupin yields having dropped in recent years and of concern.

The introduction of a new crop type such as forage sorghum or millett may be trialled as a possible inclusion in the rotation.

"The benefits of no-till have been immense," Ken said.

"Not least being that we are still able to farm without having our farm go outside our fences in the wind.

"This year we would have lost a lot of moisture if we'd still been working up country."

Putting on his WANTFA president's hat, Ken said he hoped researchers would focus on no-till as a whole system, rather than comparing a particular machine or one crop against another.

"I know researchers have to set up trials in a particular way, but often it's not the way it works on a farm," Ken said.

"For instance, comparing conventional seeding and no-till implements by seeding on the same day is often inappropriate, this year no-till implements were able to seed weeks earlier - it's that sort of thing that I mean."

Ken de Grussa
(090) 782 026

John Shearer Combine fitted with Walker Double Discs

No till a winner in 1996

By Steve Curtin,
Agriculture W.A., Lake Grace
Phone 098 651 205, Fax 098 651 282

Now that seeding is finally finished we can get on with the next jobs and stop worrying about when it will be wet enough to seed. However reflecting back on seeding this year it was more obvious than most years how much rain farmers could seed on and what machinery would do the job. In short, the start to this season really allowed farmers with no till machinery to get a head start and also to finish before most.

I remember four years ago doing some rainfall analysis with groups of farmers and trying to determine a planting rule. i.e. how much rain was needed to start seeding.

To seed in late April most farmers said they needed 30 mm or more. From early May it was 25 mm or more. The requirement tailed off until we got to mid June when farmers would plant on 10 mm.

Although rain has been patchy this year, the rain across the area has been something like - April 19 to 20, seven to nine mm, May 8 to 11, five to 11 mm, May 31, nine to 21 mm and June 10 to 11, one to nine mm. None of these rainfall events were large enough rains that farmers would call a decent break. May 31 would be considered the break for most. However by that time there were already a number of crops out of the ground, and as we know in this environment, timing is everything.

The point to make is that this year, no till yields will be in front because farmers were able to seed on less than 10 mm rainfall events in late April and early May. No till does not dry the soil out as much as conventional cultivation does, where you put yourself in a situation of not being able to seed until you get follow up rain.

If it is wet enough for the seed to germinate, then the chances are it will hang on until the next rain. This is particularly so on lighter soils and showed up this year with heavier soils having patchy emergence until "decent" rains fell.

Our No-Till Story

By Ross Whittall, Esperance

First I would like to congratulate Bill Crabtree on his outspoken article in the May WANTFA Newsletter on Herbicide Resistance.

He left me in no doubt that no-till could not succumb to weeds if we use our chemicals sensibly, and by that it means also the use of good rotation that suits our own soils and climate (we can use different chemicals on different crop types).

We purchased our first no-till Bio-Max seeder for the 1991 season after trialling a demonstration model in 1990.

At that time our biggest concern was soil erosion from strong winds which we usually get in May/June which damage seedlings and would eventually destroy our valuable top soil.

The 1991 season started very dry, but using no-till we kept seeding and got a reasonable germination and quite good crops followed.

Had we direct drilled with full cut as in previous years, we would have dried the top soil and got uneven germination and soil erosion.

After that first season we could see many benefits from no-till.

Not only reducing soil erosion, but conserving soil moisture, retaining root matter from previous crops helps organic matter which also is a good environment for soil micro organisms.

In fact this is the way of nature. It is only man that ploughed and cultivated soil and in most cases degraded it over the years without realising why! We are all learning all the time, "there is a lot to learn".

From our experience with no-till we find we have to harvest cereal crops at about 150ml and chop and spread straw chaff, not let any weeds set seed and use higher rates of Knock-Down Herbicides so as to get a complete skill before seeding.

On our sand plain soils we sometimes have a problem at Knock-Down with dust on leaves which prevents chemicals killing the plant, especially in wheel tracks.

We still have a problem with non-wetting in patches causing uneven germination.

We have changed to furrow sowing the last two years with the idea of getting more water to the seed.

This year the cause is lack of rain! In future we will have to do more s/praying!

Thank you WANTFA, together we will succeed.

The John Deere Bio Max® Seed Drill

THE TOP CROP NO-TILL EVALUATOR

By Daya Patabendige, Avon Districts Agriculture Centre, Phone 096 226100, Fax 096 221 902

The enormous interest in no-till has created a need for a system to evaluate seeding methods. TopCrop, the new CropCheck program, has designed the no-till evaluator to monitor crop performance at every stage from seeding to harvest.

* **Pre-season.** Checks involve noting pasture manipulation, soil texture and surface condition, soil nutrient tests, any physical constraints (e.g. hard pans or water-logging). Physical constraints are tested with a soil probe of 8mm steel or a soil pit. Tests for dispersion and slaking will give benchmarks for comparing long term improvements in soil structure from no-till. The no-till evaluator describes the tests.

Stubble cover is also recorded because of the importance of stubble handling with this machinery.

* **Crop establishment.** The two checks are on depth of sowing, and seedling density.
* **Crop nutrition and vigour.** This includes plant nutrition tests, and counting average stem density or average tiller numbers per square metre. Crops other than cereals are assessed as the percentage ground cover, and for legumes, nodulation score is recorded.
* **Crop protection checks**. The TopCrop weed management kit is designed to address weed management and herbicide resistance issues.
* **Flowering, grain-fill and harvest.** All crop check modules include these checks, and after harvest, data is sent to the group manager to prepare reports.

This is the first year for the no-till evaluator. With the results, groups will be able to compare different crop establishment systems.

What's Happening

29th July - 10th August

DATE	TIME	MEET AT	ENQUIRIES
Monday 29 July	1.00pm 6.00pm 7.00pm	Kondinin Country Club Barbecue Visitors Speak	Trevor Wilkins (098) 891 172
Tuesday 30 July	8.30am	42km from Hyden on Lake Varley Road	Geoff Marshall (098) 800 018
	11.00am	Lake King Tavern	Steve King (098) 719 051
	2.30pm	Munglinup Roadhouse 105km west of Esperance	Ken de Grussa (090) 782 026
Wednesday 31 July	8.30am	Pier Hotel Esperance	Ken de Grussa (090) 782 026
Thursday 1 August	1.00pm 6.00pm 7.00pm	Wellstead Hall (75km from Jerramungup towards Albany) Barbecue Visitors Speak	Jim Baily (098) 471 036
Friday 2 August	1.30pm	Peter McLeay's (Cook Road) - follow signs 12km south of Kojonup)	Tim Trethowan (098) 341 056
Monday 5 August	10.30am	New Norcia Roadhouse	Darryl Abbott (096) 511 302
	2.00pm	Miling Hotel	Darryl Abbott (096) 511 302
Tuesday 6 August	8.30am 4.00pm	Kalannie Hall Three Springs Talc Mine (Tourist Visit)	Rawley Lang (096) 661 014
	6.00pm	Morawa Hall Barbecue	Graeme and Dianne Malcolm (099) 715 002 RSVP Essential by 24th July
Friday 9 August	8.30am 10.30am 3.30pm	Morawa Hall Main Street, Mingenew Mullewa Research Station (7km towards Geraldton)	Caroline Peek/ Paul Blackwell (099) 218 509
Saturday 10 August	8.00am	Wintersun Hotel Bluff Point, Geraldton	Caroline Peek/Paul Blackwell (099) 218 509

New Bar on Drawing Board

Marshall & Co

Incorporating a paired coulter system on the front of their no-till implement has helped Dalyup enterprise, Dennis Marshall and Co, to handle increased stubble.

Brothers, Steve and David Marshall, working with Scaddan farmers Karl and Greg Raszyk, developed the paired coulter idea at a "secret squirrel shed" in 1993/94. The coulter is now under patent and is manufactured by ARP.

The coulters worked into a 4t stubble crop last year without worry, David said, providing a clear pathway for the tyne.

David Marshall said the paired coulters which act on a pivot were set at a critical five degree angle.

"The angle is pretty critical, too much of an angle and its action is too aggressive and we found at a three degree angle it didn't move quite enough."

The Marshalls have equipped 11 sets of paired coulters to their six-row Shearer trash culti drill which incorporates two rows of John Shearer 580 tynes fitted with Primary Sales No 91 knife points.

The tynes are placed on the second and fourth rows and the points digging 10 cm or so below the seed level. Twenty two Walker double disc-press wheel modules fitted on the back work on a 10.5in row spacing.

The coulter narrow point double disc set up offers flexibility, David said, and is a system they are to adapt to a 12m (40ft) six row bar currently on the drawing board.

"We've found the double discs best because they are strong, they've tidied up our seed placement and if something does go wrong all we have to do is undo two bolts and they drop out," David said.

The six row bar is being designed in collaboration with Noel Klease, of Janke Bros. in Queensland and is expected to be going to next season.

"Noel came here a couple of years ago and was interested in what we were doing," David said.

David Marshall and the Paired Coulters

David Marshall in an emerging crop of wheat sown no-till

"All we are doing is adapting what is on the combine to a bar.

"We've already ordered a three-compartment Morris bin so we're committed to it".

The brothers operate three farms with their parents, Dennis and Ursula, and brother-in-law Peter Lane.

Each property has varying soil types, with the range from light sands to clay areas. On their northern property 40km from Dalyup and roughly 85km nor-west of Esperance, rhizoctonia has been a problem in patches and so tynes are seen as a must.

"That's the beauty of the implement," David said. "No one season is the same and we believe with the set up we've got we can adapt to most situations without locking ourselves into either an all-disc implement or tyne implement.

"On the bar we're working on with Noel the Tynes can be removed from the system by lifting them and pinning them with one pin meaning we go to a straight disc system. "But if say we've got a situation with problem weeds we can take off the narrow points and fit wide points for a cultivation.

"The narrow point can work deep and is there to throw a bit of dirt if say we want to incorporate treflan.
"The tynes on the new bar will have a 350 pound break-out pressure per individual tyne". David said they had developed the system over several years and after talking to a lot of other growers.
"Without doubt no-till is a huge learning curve but the best way is to look around and see what other people are doing - look at the good points and the bad points," he said.

"At crunch time a lot of people have found all they have brought is a lot of shiny paint."

David Marshall ...(090) 765 007

The First Australian No-Till Farmers Conference & Field Day

This Conference is hosted by the Koolanooka Bowgada Landcare Group Inc. in conjunction with The West Australian No-Till Farmers Association

Background of the Group

The Koolanooka Bowgada Landcare Group Inc. was formed 1984 and is located to the south and east side of the Morawa Shire and the northern side of the Perenjori Shire.

Since land clearing began in this area in 1912, this region has had to contend with rising water tables, salinity, compaction, surface water run-off and soil degradation. The recognition of our problems and the search for the elusive answers have been the goals for the KBLCG Inc. in the last 10 years. The area consists of 170,000 hectares and involves fifty farming families. The Koolanooka Bowgada Landcare Group Inc. consists of seven sub-catchments which have a very low grade on the main drainage lines which are not naturally defined. The catchments drain into the salt lake system that terminates at Yarra Yarra Lakes west of Carnamah.

The soil types vary from Wodgil, Duplex light land, but the majority is York Gum Soils with Salmon Gum clays interspersed. These heavier soils, especially in high rainfall years, make this area a substantial producer of wheat and sheep.

No-Tillage

No-till was first introduced to members at one of our Annual Field Days by Kevin Bligh in 1989. Since then, we have shown that dryland agriculture responds very quickly to the no-tillage concept; better moisture retention, surface trash cover, previously unobtainable rotations, hard pan break-up, and less disturbance, wind and water erosion resulting in better crop water usage. Reductions in costs, labour and inventory requirements further enhance sustainable cropping profits.

The Landcare benefits from No-tillage include reduced run-off, better crop water usage, reduction of hard pan and compaction, resulting in improved soil structure.

Farming on the contour and to soil types have been adopted on a wide scale.

The Group is committed to research, developing and also sharing the knowledge obtained for the benefit of all Australian farmers. Some catchments in our group area boast 90% no-tillage adoption.

The Conference

The Conference is being held in the Morawa Town Hall and the Concurrent Sessions are being held in the marquees outside. On the second day the visits to the field trials will be done by buses. This conference is aimed at sharing with you Australia wide experiences and we hope to learn from you as a visitor to our region.

Registration Office

The Registration Office is open from 1pm on Tuesday at the Town Hall until 10pm and again at 7am on the morning of the conference.

Accommodation

As Morawa is quite a small town, you will appreciate the difficulty is accommodating large numbers of people. Apart from the Hotel/Motel, in Morawa (and also in neighbouring towns) we are relying on billets for most of the visitors. However, we do have a very good caravan park and if you have a caravan/camper/tent it would solve some of the accommodation problems. Please note your intention on the form. If you have a swag it will be a great deal easier to accommodate you.

Western Australian No-Tillage Farmers Association Inc.

MEMBERSHIP APPLICATION

WANTFA membership costs $20 per year, including Newsletters and notices of meetings. **The eight back-issues of WANTFA's newsletter (from September 1993) in an attractive folder, plus one year's membership, cost $35.** The back-issues in the folders, alone $20.

TO JOIN FILL IN AND SEND THIS APPLICATION
With signed credit card details, or your cheque to:
WANTFA, C/o Kondinin Group
PO Box 913, Cloverdale 6105
Phone (09) 478 3343, Fax (09) 478 3353

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WANTFA Membership plus folder of the eight Newsletter back-issues ($35) ☐
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