



## **Season 4 Episode 2 — Cotton Defoliation with Steve Brown**

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Speaker 1

The Alabama Crops Report Podcast, your trusted information source for Alabama agriculture.

Speaker 2

Hey, everybody, welcome back to the Alabama Crops Report podcast. Got in the studio today Simer Virk and Amanda Shearer. How are y'all doing today?

Speaker 3

Good. Doing pretty good.

Speaker 2

Good, good. You know what? I kind of buried the lead there. We actually have a special guest with us today, Dr. Steve Brown, retired cotton agronomist. Current teacher, I guess. Steve, how's it going? Welcome back.

Speaker 4

Well, thank you, Scott. Yes, I'm teaching one class, advanced crop science, and I have one Simer's student, and he missed an assignment because he was harvesting peanuts yesterday with Simer. So it was.

Speaker 5

Thanks for accommodating him.

Speaker 4

Yeah, it.

Speaker 2

If it was cotton, you would have given him an A for that day.

Speaker 4

Could be could be a if it was a soybean, I might have flunked him.

Speaker 2

Well, it's good. Good to have you back. Good to see you. Hope. Hope class is going good.

Speaker 4

It's fun to interact with students and, to challenge them to think about, you know, other than just hear the facts. Let's, How do you apply those facts?

Speaker 2

Yeah. Yeah. We're good. We're we have, missed you on the team, but we are glad that you're, able to help bring the students along. So that's good.

Speaker 4

Thank you.

Speaker 3

And we're happy you couldn't fully stay away. And we were able to get you back on the podcast.

Speaker 5

Right.

Speaker 4

Thank you.

Speaker 5

Yeah. Hey. So so we're again glad to have you. And the reason, you know, because this is a timely topic in a way. Scott and I have a a podcast with Blake Lint, and there were some questions that came up about cotton defoliation. And we're like, well, let's get Dr. Brown here. So before we dig into a lot of kind of discussion on different things, I guess I do have a question for you, because I read it a few times now, and I kind of want to get your opinion on when we talk about cotton defoliation, there are three options that I'm going to say, and you tell us which one it is.

Speaker 5

Is it more science than art or is it equally art or equally science, or is it more art than science? What's your thoughts on that?

Speaker 4

Well, there's a lot of science involved without question. And if you do something today, you'd be smarter ten days or a week to ten days out looking backwards. Well, I should have tweaked this. I should have tweaked that. So I guess that that's the art part. You don't know exactly what the how the weather's going to turn.

Speaker 4

Hopefully you got a sense, especially if you're well into the defoliation season, how the crop is responding as opposed to when you're just starting out and you don't know. Are the leaves going to be challenging to, to get off? Is it going to be hard to open bolls. And then what's the weather going to do in the next ten days or two weeks?

Speaker 4

So all those probably, make it so that it's not an exact recipe, but hopefully you as a farmer adjust as he progresses and as he looks back and as he looks forward to the forecast and so forth, and how the crop has responded already to whatever treatments he's applied or his neighbors have applied.

Speaker 5

Okay. So option one, 2 or 3,

Speaker 4

In some years, I would say again, there's always it's probably it's, it's two and a half or less like one and a half is probably, three part science and one part art. Now about that, is that fair enough?

Speaker 5

Yes, yes, that's what I was getting. Okay. If you have.

Speaker 4

A lot, I get a lot of science there. But the factors, there's always some wiggle room that, you're not exactly sure of, and you proceed. And sometimes maybe you overdo you just to make sure that you get a consistent response or consistent result.

Speaker 2

Yeah, we talked, with Blake on the last podcast similarly about, you know, how do you manage insects when weather changes and stuff like that. And I said, the same thing is kind of, you know, we got these thresholds right that are, you know, there are three bugs per five row feet. Well how much has it gotten worse.

Speaker 2

And that changes it. So it's kind of similar. Yeah. There is a lot of art to this, farming that I said in the newsletter a couple of months ago that, we were using, science as the paintbrush with which we, we make our art. So it's, it takes both for sure. Similar. I have a question for you before we get started about defoliation type stuff with pickers, and making sure they're set up right.

Speaker 2

I have seen multiple pictures, and not just from Alabama of cotton figures that are just burnt to the ground. And I don't know how much of that is wiring. How much of that is something to do with, you know, picker friction or something like that. But any thoughts or suggestions for making sure pickers are set up right.

Speaker 2

And, and when we start picking where we're safe.

Speaker 5

I think, yeah. There's a lot of reasons that can happen, but some of the most common is I've seen, you know, a lot of times there's something metal or anything, you know, that gets go through the picker and, and especially, we had, I think what happened many years ago at EV Smith where there was a wire flag, you know, that got picked up with the cotton and they went in the basket and then it started that.

Speaker 5

So I think the best thing in the is to make sure that, you know, we're not getting anything but cotton and the pickers and keep, keep a careful eye vigilant about, you know, in the field if you see something, stop the paper and pick it up and that. But there's also a lot of parts in the picker itself that can cause, you know, issues like that, picker set up and all that.

Speaker 5

That's why I talk very briefly about that. But John Deere's got this great guidelines on what things to take care of and all that. I don't think Cotton Incorporated has some resources on what applicators or growers can do to minimize some of those issues.

Speaker 2

Yeah. You know, I just feel like we talk a lot about, you know, harvest safety and mostly that's focused on, you know, riding down the road, highway from one field to the next. But certainly there are precautions for safety when we're actually in the field picking two that we need to be thinking about. That's something that's it's very expensive, obviously, but it's it could be cost a lot more than money in the wrong situation there.

Speaker 4

So I just heard from a picker, you've got thousands and thousands of moving parts at high rates of speed and and you've got, you got dust, you've got particles that are like that where especially when it's extremely dry, you've got particles that could catch fire at the spark and, and then watch if you ever get a fire in the, in the basket or in the row or in the flow of cotton, it's hard to put out because there's, there's just so much, so, so much there to burn.

Speaker 4

And, and even if you put a module up, sometimes the heat can, can flame up and, and, and ruin that module. And that could be a round roll or big module and so hard to put. Those fires have.

Speaker 2

Well, let's transition into just get your thoughts on defoliation. So I just looked in the most recent. So today is October the 10th. The most recent crop progress report had does a 20% pig harvest. So a little bit ahead of schedule, for the last five years. But we're just kind of starting now, I think, to get into a large percentage of the crop.

Speaker 2

And up until this point, everybody I've talked to, I assume recipes working really well. But we're we're getting into cooler nights now. A days are not going to be as warm any any thoughts there. Does that change your approach.

Speaker 4

Yeah. The next ten days or so, we're going to dip into to nighttime temperatures into the 40s, upper 40s in some places and even to the low 40s, maybe even in central Alabama. I looked on the forecast for Bruton and Hedlund, and they're not going to be quite as cool. They're going to continue to see some warmer temperatures.

Speaker 4

But again, when you start seeing, low 50s and into the 40s, you tend to think is is crop maturation, is it done? Are we going to may if we may not, we're going to make and that's probably true at from the central part, north, maybe in the south. They can keep hanging on. But it is again, it's making mid-October.

Speaker 4

So it's time to, to get it done in terms of, making a spray in the crop and trying to get the leaves off and opening bolls. Yeah. Cool weather changes things. One of our premier products is that days are on or several names. The old name was drop you got TDs is the same as the.

Speaker 4

You got various generic forms of that. And temperature wise, there's some charts that show when you fall below, say 65 and 60 how different products perform. And so as you fall below that 65 degree mark on the on cool and nighttime temperatures, you see less activity with that. Having said that, I was in a field earlier this week and I'm not getting in many cotton fields this time, for my for my present situation.

Speaker 4

But there was a tremendous amount of regrowth, but it had been sprayed 2 or 3 weeks ago. They'd gotten an abundant, abundance of rainfall on that. And so there was a lot of requests. I said, yeah, you got to you got to retreat. This. But so that's one product that as we get colder, maybe we, we, we opt out or change direction and go and use another combination product.

Speaker 4

And that product is Gin Star and has a little less, susceptibility to, to temperature. It still includes three days run, but it also includes dilution, which is a common herbicide. And we've got generic versions of that product. I would say, over the years I've seen farmers make their own by using some drop or TDs and put their own diluent.

Speaker 4

And I my general observation is that never work quite as good as the formulated product, and it may be the adjuvants in there or something, but the commercial product to me always was better than what the farmer did. It also suggests with some of our other, herbicide, the Foley and type products, that the phosphates or you got Aim and there's several that are in that same category.

Speaker 4

They, they're going to need the adjuvant with them, and maybe even you put a crop oil with it to in cooler weather, you're going to get a little better penetration and better performance. That's a little risky when the temperatures are hot. We're well past that today.

Speaker 5

So is there. And also to improve coverage, here's cropland at ten for more from the drift side.

Speaker 4

Or no it's really more penetration into the leaf. Yeah. Yeah. And absorption in the leaves in fact you know again on the today's run type products addition of a phosphate with that or even ammonium sulfate helps absorption and speeds it up the rain fast and so on. The products vary and of course I don't see any rain in the forecast, so that's not a big issue right now.

Speaker 4

But but the addition of a of a surfactant or even a crop oil is probably going to enhance, activity as we get into cooler weather. Now, some of the products, the PPO type products, I am an it. I wrote them down just to make sure display graviton and then another product, sharp. And I don't know that we use much of that, but they all have specific instructions on the label about which, adjuvant you should use.

Speaker 4

And and that should be followed.



Speaker 3

Yeah. You mentioned, the the weather forecast coming up, and I just looked on my phone just to make sure. But yeah, we don't really have any rain in the forecast until probably October 20th. And there's only like a 30% chance of rain. So it sounds like that'll be good news for growers that are putting defoliant out now.

Speaker 3

But when do you start worrying about when that rain is going to come in, in terms of kind of days and when you should kind of apply or hold off for a rain event?

Speaker 4

Yeah. Good question. I had a conversation. I guess it was last week with a farmer in, not quite north Alabama. But he was he was had already spray to makers was beginning to harvest and he said, sure with this was Helene was coming at that point, it looked like it was coming right up the border of Alabama and Georgia.

Speaker 4

And we were going to get significant rainfall. We got a little bit, but we didn't get nearly what our our friends to the East got. And so my thought was with a big rain possibly coming, yeah, I'm going to hold off. I'd rather I'd rather be out 3 or 4 days at least, maybe five days, if I knew a significant rainfall was coming, if it was a half an inch or an eight.

Speaker 4

Less concern, but again, with a big rain coming, I would hold off several days, but with a, you know, a 40%, 30% chance of rain. I might be two days out and think about it. And again, I may use additional ad edge events to help me get a quick absorption.

Speaker 5

Talk about different products. You know, as temperature changes, all that are there, I guess. Also considerations for growers. They may already have a stock of the same product and that changing maybe rates and stuff to get a better defoliation. And when the temperature changes.

Speaker 4

The standard approach is a three way combination. That's usually going to be, and this is a typical day can be a fast paced product, a TDC product, and then a boll opener. And so we generally see, the need for a little higher rates of some of those as temperature cools. If you get to higher rates when it's hot, you get the potential of least taking in more trash in the sample.

Speaker 4

So it, you can do a lot of things with harvest products. The first thing we think about is defoliation. And it really probably should break that down into mature leaves. And then secondly, juvenile foliage. Then third point would be, regrowth suppression. And the fourth point, a very important point is bowl opening. And a fifth one, which we probably put in, don't care much about.

Speaker 4

Or we should care about is, can you not see my hand has,

Speaker 2

Just confirmed.

Speaker 4

Is weed control, but we really don't do much of that at harvest time. And I don't think that's really the target. The other for regrowth in this kind of climate is is probably that threat is reduced. We've got extended dry weather in our immediate past in, in our distant, forecast. So that's less of an issue for us.

Speaker 4

However, when we were a little earlier in the season and we got a big rain from this and that, golly, that's where you and we come off a very dry season. That's where you get tremendous regrowth. And so that's why I've recommended to this fellow, hey, you got to go back and retreat that so regrowth is maybe less important.

Speaker 4

But at one point that we always should remember on the foliation approach and I would say harvest date is really is probably a better term, but is combination do a much more consistent job than a single product alone, even the best product at the highest rate. We're going to get better results if we mix, different products.

Speaker 4

Again, your whether it's your bottle opener plus this or plus that. Again they're, they're going to perform better in combination than singly.

Speaker 2

You keep mentioning bottle openers. So I talked with a guy yesterday that you know we all know where prices are right now with our what we think our, you know, your potential is going to be. But a lot of folks are picking the bottom bottles that they're not used to. Where do you call? Hey, we don't need to chase those upper bowls.

Speaker 2

We need to go ahead and get what we got. Or how how long out do you wait for that? No problem. It varies year to year, but.

Speaker 4

Well, that's a that's always that's a timing question of when do we make our defoliation application. And part of it is, is your responsibility. I'm going to be looking at those upper bowls. And I'm going to be cutting some of them. And I'm going to see if I got stinkbug damage that you let escape. So yeah. So in one sense, that's an issue.

Speaker 4

I may have some both. Are they damaged? And then size wise, I'm going to look at them. And this kind of persisting dry weather, I just don't know how much we're going to make that up. Or can it be so. So we're not, probably from central to north Alabama maturation, and we're probably about made what we're going to make.

Speaker 4

Maybe we can make some more further south. But I wouldn't be holding up my breath. I wouldn't be delaying my picking operation. I'd go ahead. And if I could, I'd be deflated. Most most of what we have. I don't know what

the frost date is going to be. Nobody knows that, in our part of the world, it should be around the 1st of November.

Speaker 4

I've seen years in the southern extremes where it could be Christmas. We don't know what's going to happen. But now, if a frost was on the forecast, it'll be 4 or 5 days out ahead of that. I remember, having calls and even when I was a graduate student here to Albany, up was a farm nearby.

Speaker 4

And it was it was a beautiful field. But he needed to defoliate, needed to open some Boles was the frost was coming. The freeze was coming in in less than 48 hours. So it's just too late. You need again, you need several days to go ahead and get the crop moving in that direction to get to the boll opener type products work in the bowl open, of course, up at the fall.

Speaker 4

And what we used to call prep and then finish is a is sort of a souped up version. I think it is a premium product and probably priced accordingly. It probably works a little faster. But you can probably do the same thing if you tweak the rate of the standard upon products. But again, I think finishes a great product.

Speaker 4

I just sometimes I might not want to spend that money especially wouldn't spend that money if I'm going to be open and ready to pick with finish at ten days, but I'm not going to pick it to 15 or 18 days anyway. I could have used the same the cheaper ethanol, product at a standard rate.

Speaker 2

What's your, what's your general age bowl that you can expect to open?

Speaker 4

Oh, well, the to me, the the telltale final sign is can I cut through it, can I sell, you know, something like. Depends on how sharp your knife is. But I, if I try to cut through it and it strings out and I begin to see, darkening of the seed coats and cross section, that bowl is pretty mature, and I think I can proceed.

Speaker 4

The other the other stain, one of the other standard methods is to count. I'm assuming that's the first position boll. If I've got a first position cracked or open bowl below that, I should be mature four or possibly five crack bolls, first position bolls above that. So four is probably a very good number. But again, I really like the the knife technique to confirm.

Speaker 4

Generally what I see is that bowl ready to go. And that's that to me is the is the best number. And clearly you have differences across the field. But I want you guys to look at the big picture there in our current weather forecast. I hate to say this because I think people ought to get in a hurry and they don't.

Speaker 4

There's not a big threat of weather that's going to take our crop now, had had had, Milton turn north. We might be we might be crying. And I know in Georgia they're, they're they've lost 30, 40% of their crop because of, Halloween. So, you know, maybe I could wait a little longer, but again, this let's get this crop out.

Speaker 4

Get it done.

Speaker 2

We talked on the podcast with Blake about how we I mean, you know, the last four years we've written by fields with you, and you say, go get them what you're doing. I mean, now you're saying, well, hold off.

Speaker 4

I would rather, guess I've driven over fields, I wish where where are where is the picker? And I wish I had a big vacuum cleaner. Could suck it all up because it's really in white. And where are you? Let's get with it. So, I don't

think and this is probably, this is might be too gross of a criticism, but our peanut cotton farmers, if they're going to give priority to peanuts and sometimes the cotton sitting out there and suffering and we're losing weight and color and so forth because we're waiting.

Speaker 4

I would have hoped that the railroad picker would have cured that, and it hadn't done enough. In my opinion, that's not the pickers fault is the Mr. Operation's fault. Let's get it done. Let's get the crop. And I think where you're from in the Mid-South, I think they have a greater sense of urgency and they get after it.

Speaker 4

And, and and they get it out much quicker. And I think part of that is the back door that they know once it starts raining on some of their heavier souls, all they can do is duck hunting. Deer hunt. Yeah. And we kind of string it out a little farther that I wish was the case. Yeah.

Speaker 3

Yeah. I remember last year I drove by a few fields, like one week. They looked beautiful, ready to go. And I'm like, why? Why haven't they started yet? And then the following week we had some rain. And then I went by like a little bit after that and a bunch of hard luck. And it's it's just sad to see.

Speaker 3

And unfortunately we don't have a crystal ball. We don't know what it's going to do. And the tropics are still active. So I think still getting on that if your crop is ready is still the best bet.

Speaker 4

I did talk to a farmer, maybe yesterday, who had already picked a thousand acres. So I was. I was proud of that. Yeah, yeah. Get it, get it done. Get it. You know, that's, my daddy was a hurry up kind of person. And, you know, sometimes if you if you stalled in your mail, he'd be taking your plate for y'all.

Speaker 4

Well, I'm not finished with that. So.

Speaker 2

But that's just that. That tax you know, it's off their plate.

Speaker 4

It's I don't know I just urgency. And again there's so many things going on at harvest. And there's nothing more aggravating to work on than a cotton picker. There's so many moving parts and they're hard to get to and they're expensive and knuckle busters and all that. And so and labor and so many things. Challenges. It's easy to talk about it from the chair.

Speaker 4

Yeah. From the office in the pickup.

Speaker 2

From your ivory.

Speaker 4

Tower. Yeah. Ivory tower.

Speaker 5

I've seen already last, especially the last 2 or 3 days on Twitter. So many pictures of Packers now waiting on board or something. Yeah.

Speaker 4

It it hurts. Yeah it hurts. And again, it's a it's an expensive problem. And time is also a significant expense in this whole deal too.

Speaker 5

So say one thing you said which I kind of started to, you know, because we were talking about, the cotton prices and everything. And I feel like when you're on the back end of the crop, you know, especially defoliation, all that, you already know what type of input you have, all that, and the prices are not looking so good.

Speaker 5

Is there something like the economical defoliation in a way where you don't want to spend a bunch of money just trying to get the card that's in there? Now you know where you sit in that season, right?

Speaker 4

Yeah. Great question. I looked at, I participated in the past years on the Mid-South defoliation. God. And I just took a quick gander at it, and I see some of the rates that are recommended there. For example, most of the cool weather rates on Earth often or finish or at 32oz or a quart per acre. Interestingly, in the old days, we used a pint to a pint and a half and 1.1 and two thirds pints was a high rate.

Speaker 4

And I know some farmers use them well beyond two pints, but. So I think we might could in a lot of situations can't. And I've driven by you got cotton is pretty well open. I still like the ethanol product in the mix because of it's a good defoliant in addition to opening both. So maybe if we have a crop like that, we might get cut back even to a pine about the fall and and another product, whether that's the phosphate, whether that's one of the PPO products, Amory Tea or that or that list, that might be a cheap way to get by.

Speaker 4

Now, having said that, I hate to say the art part of this, but there's nothing. If you do a poor job and you have to retreat, you've cost yourself time and money. And so that's so. That's why people sometimes do a little more than just to make sure. I also would add to that questionable part of it is how good is good enough?

Speaker 4

You know, you've got a little bit of grain left on. Should you pick it? Should you spray it again? That's a judgment call. But you don't want a grain stained cotton. But it doesn't. It's not doesn't have to be perfect to, to to escape those penalties. So that's, that's, you know, maybe that's a budget way of getting a pipeline and half or no more



than that of the ethanol and or finished type product, and then an additional product that's going to give me some mature leaf removal.

Speaker 4

That might be a cheap way to escape, but again, you'd be smarter a week later as you look back and see how good a job that did.

Speaker 5

I have a follow up on that because I didn't know, what they endured and Cotton Fields started learning little bit agronomy side and all that. You know, being an engineer, you don't get exposed to a lot of that in your college. What what's.

Speaker 4

An engineer?

Speaker 5

I don't know, that in my be protest.

Speaker 4

I think schools need to be committed to training and engineer. Actually. Thank you for your profession. Yeah.

Speaker 5

That they actually, it's very common to have to pass applications in Mississippi or somewhere there because we're did a multi-state trial, and they keep bringing this to pass thing. And I'm like, what is that? And but I've also seen growers in Georgia in a way where they had to go back. And the second pass, how much percent of the growers, you think in our state get into situations like that every year?

Speaker 4

I would say, I would say there are some people committed to a two way approach, and if you do so, your your level of consistency is going to be extremely high. You're going to almost get a perfect job every time. There's a lot of waste, a lot of products, a lot of mixes. You can use that application one at application two, and the likelihood of perfect results are going to be near 100%, you know, 95 better.

Speaker 4

So you're going to see really good results. My preference is hey, let's go for it once. And in that rare situation we'll touch it up. So I would say in Alabama and this is wild, guess there might be 5% or so. The folks that are committed to two way and the touch up is sort of again, a judgment call on the back side.

Speaker 4

We may have a little a little more regrowth or, or we have a year or two that, that hey, these bones are hard to open and we retreat without a fall. And I think that's not that common, especially if we have good stinkbug control. So I my, my approach is, hey, let's go, let's go one application and be done with it.

Speaker 4

It really good irrigated cotton really rank cotton with real good yield potential. I can see I can accept that argument. I still would try to do it once and just touch it up if necessary. And that would be a that would be the exception rather than common.

Speaker 2

Is there anything to it also over there were there they plan earlier. They do everything earlier. So it's a little bit different time of the year when they're starting to foliation. Maybe more potential for regrowth.

Speaker 4

Are you talking about in the delta.

Speaker 2

Delta.

Speaker 4

Yeah. Well they go have heavier soils and they would call them ice cream solid. And so they got a lot of growth power underneath those. So they would have a big canopy. So they'd be more committed to that. And that's probably also their traditional approach where far more like two applications. So

Speaker 2

We're pulling on a bed. Two.

Speaker 4

Oh yeah. Yes. And they're and they're well irrigated throughout much of the season. It, it the, the two way approach is again almost foolproof. And you can you, you could, you could do some things to remove leaves, begin to open bolls and then follow that up as needed with a very aggressive bowl opening application. And again, your, your, your likelihood of great success is going to be 95% or better.

Speaker 4

The one point that that really favors that is if you have a dense canopy, the SFI, products, they're not, what's the word I'm looking for? They're not, systemic within the plant. So you got to cover, you got to touch. Do you need to cover the bow? You need to spray the bow. And so when you've got some foliage removed and you got more access to the bow, that's why you get greater consistency there in terms of bow opening.

Speaker 4

But again, that's their culture, their climate, and the crop they grow, we're less we probably in most places grow a, a less dense canopy than most places. Well, that's not an absolute statement. There.

Speaker 5

Well, I, I think we're getting close to our time here. But last thing, I guess, because something again, that came up our last episode is the way we have our agricultural in Alabama. There's, you know, different regions. And you kind of even mentioned about central. If I was in Central or South, I would do this. How would your recommendation change for cotton growers in north Alabama versus central versus south Alabama, looking at the weather or the other concentration.

Speaker 4

In north Alabama? I think it's done. You know, you got what you got. Like let's let's get it. Let's get it sprayed. Let's get it open. Let's get it picked. And I think the mentality there is they're committed to that approach more a little more. So as we move further south, in central, is this probably done here?

Speaker 4

We're going to see we're not going to see quite as cooler temperatures in central and south. So I still think as we get to the middle of October in the next week or so, beyond that, we about put on whatever bowls that really are meaningful and as maybe pertaining to an earlier question in that upper canopy, those bowls might contribute 5% of the yield, and we risk those waiting on those two to, we endanger the rest of the crop.

Speaker 4

So again, I'm almost done in central and maybe another week or so in the South, and then I'm done. And let's, let's get it done. Let's get it sprayed. Let's get it out.

Speaker 2

We'll several hours we'll, we'll end, there with a quote from Doctor Brown. Go get them.

Speaker 4

Go get them. Let's get it in the basket. It in the barn. In the barn and in the Gin

Speaker 2

Yeah that's right. Well, Steve, we appreciate your time today. Zimmerman enjoyed it. As always, if any of us can ever be of any help, please don't hesitate to reach out and let us know.

Speaker 1

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