

イチジクの樹が毎年甦る 新剪定法(リフレッシュ剪定)開発

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■技術の概要

骨格となる枝(主枝)を毎年新しく入れ替え、イチジクの樹を常に若い状態に保つことができる新しい剪(せん)定方法(リフレッシュ剪定)を開発した。今までの剪定に比べ、生育促進や果実品質の向上、障害の回避など様々なメリットがあり、特許出願(特願 2010-281204)を行った。

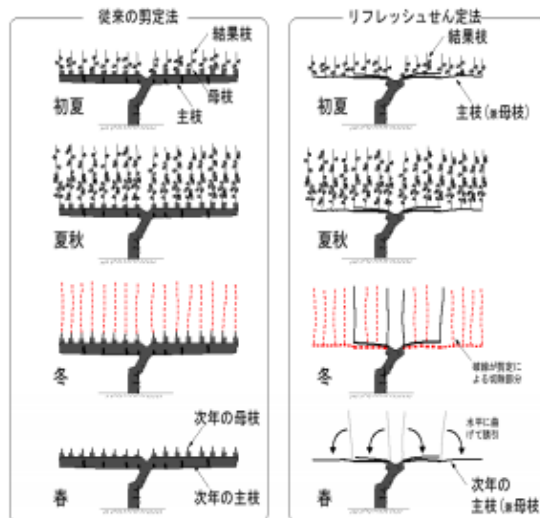
■技術の特徴

- ・リフレッシュ剪(せん)定では、主枝が毎年更新されて、常に3年生以内の若い状態に維持される
- ・結果枝が直接主枝から伸びる樹形になり不要な太い枝が減って、樹の生産効率が上がる
- ・特別な施設や器具を必要とせず、栽培農家は簡単な講習だけで技術を導入可能
- ・従来の剪定からリフレッシュ剪定への移行も容易で、移行期間中の収量低下も発生しない

■応用できる用途または活用できる分野

- ・凍害やカミキリムシの被害を受けても、リフレッシュ剪定なら主枝が自動更新され、樹の衰弱を未然に防止可能
- ・生育が早まるので、出荷開始を早めた有利なイチジク販売に活用可能
- ・果実の肥大効果があるため、果実の小さな品種に応用し、商品性を高めることが可能
- ・当研究所で開発した「棚一文字栽培」と組み合わせると色づきがよく、大きなイチジク果実を生産可能

■技術の内容



「ハサミ」と「ノコギリ」だけでできる新技術！



この技術
の導入で



主枝が損傷しても毎年更新できる

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outline of ■ technology

It is possible to swap new every year (main branch) branch which is the framework to keep the young always state the tree of fig We have developed a (refresh pruning) and 剪 new and (not) the estimation methods. Compared to pruning until now, there are various benefits of improving fruit quality and promoting growth, such as the avoidance of failure, was carried out (Application No. 2010-281204) patent application.

■ Features refresh 剪 of technology is constant (does not), the main branch is updated annually, is maintained in the young state of third grade always within

is unnecessary thick branches become a tree form that extends directly from the main branch branches Results and RuThe reduced, without the need for equipment and facilities production efficiency of the tree is a special-up, migration to refresh pruning is easy from pruning can be introduced, conventional technology only simple training, growers during the transition period applications yield reduction does not

fields that can take advantage of the application or can ■

Even if damaged by longhorn and and frost damage occur, main branch is automatically updated if refresh pruning, the weakness of the

can prevent and growth because earlier in advance tree, start shipping The coloring because there is a hypertrophy effect of possible use fruit to an advantageous figs sales hastened, and combine that it applied to small varieties of fruit, and improve marketability was developed in the possible-the Institute as "shelf character cultivation" production Gayoku, a large fig fruits

possible

the contents of the ■ technology

technology new technology! that can be as "scissors" only "saw-tooth"

fruitincreases

in the introduction of this

Every year the main branches but also damaged main branch was damagedyou also can update also able updated annually

Kochi University Graduate School, Fukuoka Agricultural total試豊before minute field, Hyogo Agricultural Technology Research Center, Ehime Agricultural Research Fruit Research Center ## joint research institute]

refresh pruning

old pruning

growth to advance

fruitincreases:

oldpruning Partial

(germination is early)refresh part

イチジクの樹が毎年産る新剪定法（リフレッシュ剪定）開発

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1. 目的

高齢化が進むイチジクの栽培現場では、大幅な省力化が期待できる一文字整枝のような画一的な樹形が望ましいが、新梢発芽遅延、果実の着色不良、凍害の劇症化の問題がある。また近年は、更なる省力化や着色向上（細見・三輪、2010）、凍害軽減（真野、2010）に効果のある「棚一文字整枝」も開発されているが、果実がわい小化する問題がある。そこで、これらを解決する新たな剪定法としてリフレッシュ剪定（以下、新剪定）を考案した。

2. 方法

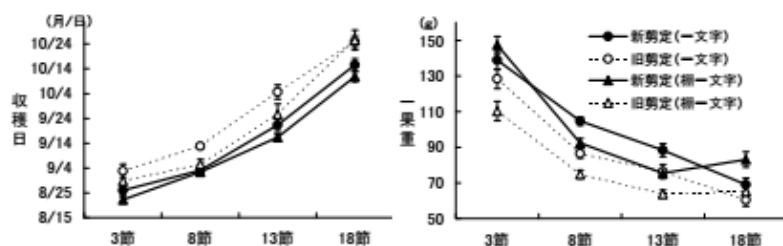
新剪定は、主枝を毎年更新して3年生以内に維持する剪定法で、結果母枝が主枝を兼ねる極端な長梢剪定となる点が、従来の短梢剪定（以下、旧剪定）と大きく異なる。実験では、旧剪定を行っていた一文字整枝および棚一文字整枝のイチジク「樹井ドーフィン」を3樹ずつ供試し、2009年～2010年にかけて、主幹を中心に片方の主枝を新剪定に移行した。移行年である2009年は主枝の一部に古枝（7年生）が残ったが、兩年とも結果母枝が主枝を兼ね、全ての結果枝が主枝から発生する点は共通していた。

新梢の展葉は2010年に調査し、各主枝で5月18日までに発芽した新梢の5割が展葉した日を計測した。これ以外は2009年、2010年とも同様に行い、新梢については、不用な副梢を毎週切除して個数と乾燥重量を測定し、主枝から約1.3m離れた位置で摘心を行った。また、結果枝の3節、8節、13節、18節付近から成熟果を採取し、収穫日、果重、縦径、横径、着色程度、Brix値を測定した。なお本研究は、新たな農林水産政策を推進する実用技術開発事業により実施した。

3. 結果および考察

新剪定部分の新梢の展葉は早く、2010年の5割展葉日は一文字整枝で19日、棚一文字で12日早くなり、それに伴って新梢の伸長も前進した。不用な副梢の発生は、2010年は差がなかったが、2009年は新剪定部分で少なかった。一方、果実については、2009年の棚一文字整枝において、新剪定部分で3節果の成熟が早まり、果重が大きくなった。2010年には、整枝法や着果節位を問わず、新剪定部分で果実の成熟が早まり（第1図左）、果重が大きくなったが、果重の増大は特に棚一文字整枝の3節果で顕著であった（第1図右）。また、新剪定法の果肉糖度は2009年は旧剪定と差がなかったが、2010年は、棚一文字整枝で18節果の糖度が低いものの、一文字整枝では3～8節果で高くなった。

以上、新剪定は、イチジク新梢の発芽と果実の熟期を早め、特に棚一文字整枝においては、果実肥大の促進効果が高く、本整枝の欠点である果実のわい小化を防止できる。また、この効果は、新剪定への移行年から完成年にかけてより顕著になると考えられた。



第1図 樹形および剪定方法の違いがイチジク「樹井ドーフィン」の着果節位別の果実成熟日（左）と一果重（右）に及ぼす影響。データは2010年の結果を、また垂直線は標準誤差を示す。

イチジク、整枝剪定、生育促進、果実肥大、凍害防止

new pruning method tree of figs revived every year (refresh pruning) development

Kochi University Graduate School: joint research institute (Safety Research Department of the food) Hosomi Takeshi Isobe, Akihiro Miwa Yuka, Fukuoka Nogyo Sogoshikenjo Buzen minute field, Hyogo Prefectural Agriculture, Forestry and Fisheries Technology Center, Ehime Prefectural Agriculture, Forestry and Fisheries Research Institute Fruit Research Center 1. eyes basis

in the field of cultivation aging, significant and labor saving There tree form a uniform, such as the character Seieda that can be expected is desirable, but there shoot germination delay, bad coloring of the fruit, is a problem of fulminant of frost damage. In recent years, have been developed is effective (Mano, to Hosomi Miwa, to), frost damage also reduces the "shelf character Seieda" coloring and improving labor-saving further, but fruit there is a problem that trivialize. There, was devised refresh pruning (hereinafter, new pruning) and as a new pruning method for solving these problems. 2. how method

The new pruning, except that in the pruning method to maintain the grade within the annually updated the main branch, it becomes extreme Cho Kozue pruning mother branches Ru also serves as the main branch result, traditional I differ significantly (hereinafter, old pruning) and short pruning tree tops. In the experiment, today try each tree, over 1 year ~ 2 years, main branch of the one around the main trunk figs 'Masui Dauphine' shelf character Seieda and character Seieda that had done the old pruning I was migrated to the new pruning. Furueda (p grade) remained a part of the main branch is 1 year is a transition year, except that the mother branch also serves as the main branch results in both years, the result of all the branches is generated from the main branch is were common.

foliation of shoots investigated in 2 year, we measured the day percentage of shoots that were germinated until month Date in each main branch was leafing. Carried out in the same manner 1 year, both 2 years except for this, for the shoot, to measure the dry weight and the number can be excised weekly unnecessary Fukukozue, at a distance of about 10 cm from the main branch I was pinching. Also, collect mature fruits 1 clause of the branch, 2 clause, 3 clause, from 3 clause near, was measured harvest date, fruit weight, vertical diameter, transverse diameter, about coloring,

the $\hat{L}IL \cdot$ value result. It should be noted that this study was carried out by practical technology development projects to promote a new policy of Agriculture, Forestry and Fisheries. Discussion and $\zeta \zeta$ 3.

Exhibition leaf shoots new pruning portion results quickly, $\emptyset \bar{A}$ date, \bar{u} split foliation Date of $\bar{u} \div \emptyset \div \text{year}$ is faster $\emptyset \bar{u}$ Date shelf character in the character Seieda, new along with it extension of the tree tops also advanced. The generation of waste Fukukozue, there was no difference $\bar{u} \div \emptyset \div \text{year}$ but, $\bar{u} \div \bar{A}$ year was less in the new pruning part. On the other hand, the fruit, in the shelf letter Seieda of $\bar{u} \div \bar{A}$ year, mature \acute{u} loment is accelerated in the new part pruning, fruit weight is increased. The $\bar{u} \div \emptyset \div \text{year}$, regardless of position and fruit set clause Seieda Act, (No. \emptyset diagram left), fruit weight is greater maturity of the fruit becomes earlier in the new pruning part, but the increase of fruit weight shelf especially was prominent in \acute{u} loment of character Seieda (second \emptyset right figure). In addition, there was no difference between the old pruning $\bar{u} \div \bar{A}$ year pulp sugar content of the new pruning method, but $\bar{u} \div \emptyset \div \text{year}$, the sugar content of $\emptyset \ddot{y}$ loment is low shelf character integer branch but, $\acute{u} \sim$ in character Seieda it was higher in the \ddot{y} clause results. ζ

or more, earlier, in the shelf letter Seieda, promoting effect of fruit enlargement is high, new pruning can prevent dwarfism fruit is a disadvantage of Moto Seieda especially the ripening of fruit and germination of fig shoots. Moreover, this effect was thought to be more pronounced between complete year from year transition to the new pruning. $\zeta \zeta \zeta$

(month / $\zeta \zeta(g)(g)$)

10/24

150

new pruning (one ζ

letter) 10/14

10/4

old pruning (letter) 130

new pruning (shelf character) Osamu

old pruning (shelf character) days $\zeta \zeta$

over

9/24

one result

9/14

double

90

ç ç

9/4 8/25

ç

Section 18 Section 13 Section 3 Section 8

70

8/15

50

18 Section No. ø Figure ç 13

SectionSection3Section 8tree form and the difference of the pruning method(right)(left)
and fruit maturity date of the clause Fruiting position of another fig 'Masui

influence on the ç IchihatekasaneDauphine'.Vertical lines indicate the standard error
also, the results of the ù ÷ ø ÷ year 2004 data. ç

figs, Seieda pruning, promoting growth, fruit enlargement,
cryoprotective ç